KOOTENAI RIVER ECOSYSTEM IMPROVEMENTS STUDY 9404900

SHORT DESCRIPTION:
Assess resident fish populations in the Idaho portion of the Kootenai River and identify fisheries enhancement opportunities.

SPONSOR/CONTRACTOR: KTOI
Kootenai Tribe of Idaho
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208/267-3620

SUB-CONTRACTORS:
Ecometric Research Inc.

GOALS

GENERAL:
Supports a healthy Columbia basin, Maintains biological diversity, Increases run sizes or populations, Adaptive management (research or M&E)

RESIDENT FISH:
Research, M&E

NPPC PROGRAM MEASURE:
10.8B.22

RELATION TO MEASURE:
This project will assess resident fish populations and identify fisheries enhancement opportunities in the Idaho portion of the Kootenai River.

BIOLOGICAL OPINION ID:
USFWS - BO

TARGET STOCK	LIFE STAGE	MGMT CODE (see below)
Bull trout westslope cutthroat redband trout	N/A	W
Kokanee salmon	N/A	W
Burbot	N/A	W
White sturgeon	N/A	(L)

AFFECTED STOCK	BENEFIT OR DETRIMENT
Increased populations of undesirable fish species: squawfish, whitefish and peamouth	May be detrimental to target species

BACKGROUND

Stream name:
Kootenai River and tributaries

Subbasin:
Kootenai

Hydro project mitigated:
N/A Damages may not be completely related to a hydroelectric project.

HISTORY:
r the Kootenai River system.

BIOLOGICAL RESULTS ACHIEVED:
None yet, new project.

PURPOSE AND METHODS

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SPECIFIC MEASUREABLE OBJECTIVES:
Identify best management options in order to enhance the aquatic ecosystem and provide future harvest opportunities of white sturgeon, kokanee salmon and burbot in the Kootenai River system, historically fished by the Kootenai Tribe of Idaho.

CRITICAL UNCERTAINTIES:
Unfavorable biologic conditions may result due to proposed ecosystem enhancement.

BIOLOGICAL NEED:
Enhancement of the Kootenai River aquatic ecosystem to improve the sturgeon, burbot and kokanee fisheries.

HYPOTHESIS TO BE TESTED:
The alteration of the natural hydrograph due to the construction and operation of Libby Dam, the lack of backwater rearing habitat due to diking, and the decrease of nutrients downstream from the dam has caused the aquatic ecosystem to collapse.

ALTERNATIVE APPROACHES:
N/A No alternative approaches were considered.

JUSTIFICATION FOR PLANNING:
N/A The primary focus of the project is not on planning, assessment or coordination.

METHODS:
No implementation measures have been decided on at this time. Model construction for the Kootenai River system will serve as a tool for developing best management options which will enhance the aquatic ecosystem. Multiagency scoping and the federal recovery planning process will also contribute to future sampling designs and statistical testing.

PLANNED ACTIVITIES

SCHEDULE:

Planning Phase **Start** 8/95 **End** 7/00 **Subcontractor**

Task Provide annual, interim research reports and project completion reports

Planning Phase **Start** 8/97 **End** 7/98 **Subcontractor**

Task Open up experimental backwater areas and monitor fish usage of this habitat.

Planning Phase **Start** 8/97 **End** 7/00 **Subcontractor** Yes. Unknown at this time

Task Develop, evaluate and experimentally test nutrification for the Kootenai River based on information generated by the predictive model.

Planning Phase **Start** 8/96 **End** 4/97 **Subcontractor** Ecometric Research Inc.

Task Develop a predictive model (incorporating empirical Kootenai River biological data) to estimate trophic responses to a range of hypothetical nutrient addition schemes for the Kootenai River. This task will be subcontracted out.

Planning Phase **Start** 6/95 **End** 5/97 **Subcontractor**

Task Complete a one year invertebrate investigation.

Planning Phase **Start** 8/95 **End** 7/00 **Subcontractor**

Task Evaluate water quality in the Kootenai River for heavy metal and phenol pollutants.

Planning Phase **Start** 8/95 **End** 8/96 **Subcontractor**

Task Complete a comprehensive baseline biological status report of aquatic biota, including past and present nutrient budgets in the Kootenai River.

PROJECT COMPLETION DATE:
2000

CONSTRAINTS OR FACTORS THAT MAY CAUSE SCHEDULE OR BUDGET CHANGES:
Implementation measures used to enhance the aquatic ecosystem may create a favorable environment for undesirable species.

OUTCOMES, MONITORING AND EVALUATION

SUMMARY OF EXPECTED OUTCOMES

Present utilization and convservation potential of target population or area:
N/A

Assumed historic status of utilization and conservation potential:
N/A

Long term expected utilization and conservation potential for target population or habitat:
Increased populations of white sturgeon, burbot, and kokanee salmon.

Contribution toward long-term goal:
Information: Comprehensive literature review and recommendations for ecosystem and fisheries improvement measures in the Kootenai River to increase fish production.

Indirect biological or environmental changes:
Implementation measures used to enhance the aquatic ecosystem may create a favorable environment for undesirable species.

Physical products:
Increased numbers of white sturgeon, burbot and kokanee salmon.

Environmental attributes affected by the project:
N/A No environmental attributes are expected to be directly or indirectly affected by the project.

Changes assumed or expected for affected environmental attributes:
N/A

Measure of attribute changes:
N/A This project will not include any sedimentation studies.

Assessment of effects on project outcomes of critical uncertainty:
The development and use of the Kootenai River predictive model should reduce the number of critical uncertainties associated with this project.

Information products:
Information: Comprehensive literature review and recommendations for ecosystem and fisheries improvement measures in the Kootenai River to increase fish production.

Coordination outcomes:

None yet, new project.

MONITORING APPROACH

No implementation measures have been decided on at this time. Model construction for the Kootenai River system will serve as a tool for developing best management options which will enhance the aquatic ecosystem. Multiagency scoping and the federal recovery planning process will also contribute to future sampling designs and statistical testing.

Provisions to monitor population status or habitat quality:

Tributary assessments will be conducted along with monitoring experimental backwater areas, in order to obtain fish population estimates.

Data analysis and evaluation:

In order to determine productivity of the Kootenai River, the invertebrates that are collected will be enumerated and identified, and species diversity and densities will be calculated. Statistical analyses will take place following all identification, enumeration and biomass calculations. Invertebrate identifications and statistical analyses will be double checked periodically by an aquatic resource consulting firm in order to give credibility to the work done by the tribe.

Information feed back to management decisions:

All data obtained will be used in the development of best management options for aquatic ecosystem enhancement.

Critical uncertainties affecting project's outcomes:

By developing and using the Kootenai River predictive model, the number of critical uncertainties associated with this project will decrease.

EVALUATION

Increased white sturgeon, burbot, and kokanee salmon populations.

Incorporating new information regarding uncertainties:

The Kootenai River predictive model will be used to determine the affect of these uncertainties on the overall aquatic ecosystem.

Increasing public awareness of F&W activities:

N/A

RELATIONSHIPS

RELATED BPA PROJECT	RELATIONSHIP
9401200 Kootenai River White Sturgeon - M&E	All work is being done in the Kootenai River system. These projects are coordinated through the Kootenai River Basin Steering Committee.
8806500 Kootenai River Fisheries Investigations	All work is being done in the Kootenai River system. These projects are coordinated through the Kootenai River Basin Steering Committee.
8806400 Kootenai River White Sturgeon Study and Aquaculture	All work is being done in the Kootenai River system. These projects are coordinated through the Kootenai River Basin Steering Committee.
8346700 Libby Reservoir Levels/Kootenai Ifim	All work is being done in the Kootenai River system. These projects are coordinated through the Kootenai River Basin Steering Committee.

OPPORTUNITIES FOR COOPERATION:
Coordination of a workshop to develop a feasibility model for Kootenai River ecosystem enhancements. Coordination with the Kootenai River Basin Steering Committee will assist in assuring timely completion of required actions.

COSTS AND FTE

1997 Planned: $226,572

FUTURE FUNDING NEEDS:

FY	$ NEED	% PLAN	% IMPLEMENT	% O AND M
1998	$250,000			
1999	$237,000			
2000	$237,000			
2001	$237,000			

PAST OBLIGATIONS (incl. 1997 if done):

FY	OBLIGATED
1995	$175,000
1996	$232,353
TOTAL:	$407,353

Note: Data are past obligations, or amounts committed by year, not amounts billed. Does not include data for related projects.

OTHER NON-FINANCIAL SUPPORTERS:
The Kootenai River predictive model developed through this project will be the result of a cooperative effort among numerous federal and state agencies and the Koottenai Tribe of Idaho.

LONGER TERM COSTS: N/A The project will be completed in the year 2000.

1997 OVERHEAD PERCENT: 59.5%

HOW DOES PERCENTAGE APPLY TO DIRECT COSTS:
The 1997 overhead percentage applies to personnel costs only.

CONTRACTOR FTE: Three

SUBCONTRACTOR FTE:
Two people are currently subcontracted to help develop the Kootenai River predictive model. Future subcontractors are unknown at this time.